

An investigation on the Role of Artificial Intelligence in corporate sectors in post COVID-19: An Empirical Study

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ABSTRACT

Possibly the most fascinating period in human history is the present technological era, where advancements and breakthroughs are occurring at a breakneck pace. The economy, society, and individual are all impacted by artificial intelligence, which has become a necessary component of daily life. Artificial intelligence has advanced significantly in recent years, and practically every firm is now changing its business models and strategy to include AI into all business activities. Its impact needs to be addressed, though, as businesses are still unaware of the ramifications. This study looks at decision-makers and normal employees in businesses to see how artificial intelligence affects them. Four distinct business characteristics that aid in determining the influence of AI on companies are taken into account during the examination. Based on the analysis's findings, AI has become main-stream and presents a wealth of prospects and opportunities to change the nature of employment. AI has been shown to have a positive effect on all business processes by enhancing market leadership in post covid-19 period.

Keyword: COVID-19; Business Research ; Artificial intelligence; Technology; Automation ;ChatGPT

1. Introduction

In the last 24 months, there has been a significant shift in how businesses function. As per **Aziki and Fadili (2021)**. Artificial intelligence (AI) is being used in many different industries, and this has been further accelerated by the COVID-19 pandemic. In a few of months, we have accomplished the digital transformation equivalent of two years. Although the phrase "artificial intelligence" was first used in 1956, its use is growing in popularity today because of vast amounts of data, sophisticated algorithms, and advancements in memory and processing capacity. The goal of artificial intelligence is to enable machines to exhibit a level of intelligence akin to that of humans or animals stated by **(Hopkins and Akbari, 2022)**. These artificial intelligence systems in the corporate world are made to solve issues and carry out duties with great efficiency. They can only do certain tasks by definition, such as advising a product to an online customer or projecting an organization's resource needs. The literature on the application and function of AI in business is actually somewhat vague, especially in light of the COVID-19 pandemic. The implementation of the scoping review, which sought to identify knowledge gaps and systematically represent the field's current level of research, was prompted by these factors. The purpose of this scoping study is to identify the global literature that has been published on artificial intelligence (AI) and its applications in the business sector over the past two years (March 2020 and March 2022), in addition to attempting to determine what is currently happening in the context of the COVID-19 crisis and reporting scientific productions in this field of research. In order to bridge this knowledge gap, we aim to ask and answer the following research question: What is known from the literature about the uses and roles of artificial intelligence in the business sector during the COVID-19 crisis?

In the high-tech society of today, artificial intelligence has become a valuable new instrument. Artificial intelligence is the ability for a system to exhibit cognitive functions. The voices of Google and Apple's voice assistant, Siri, both use natural language processing. Image processing is necessary for the facial recognition algorithms employed by Google's self-driving cars as well as Facebook's. The phrase "information mining" has risen in popularity since the software development business gathers a ton of information every day. Facebook and Google require a plan to analyze the vast amounts of data they are constantly collecting from

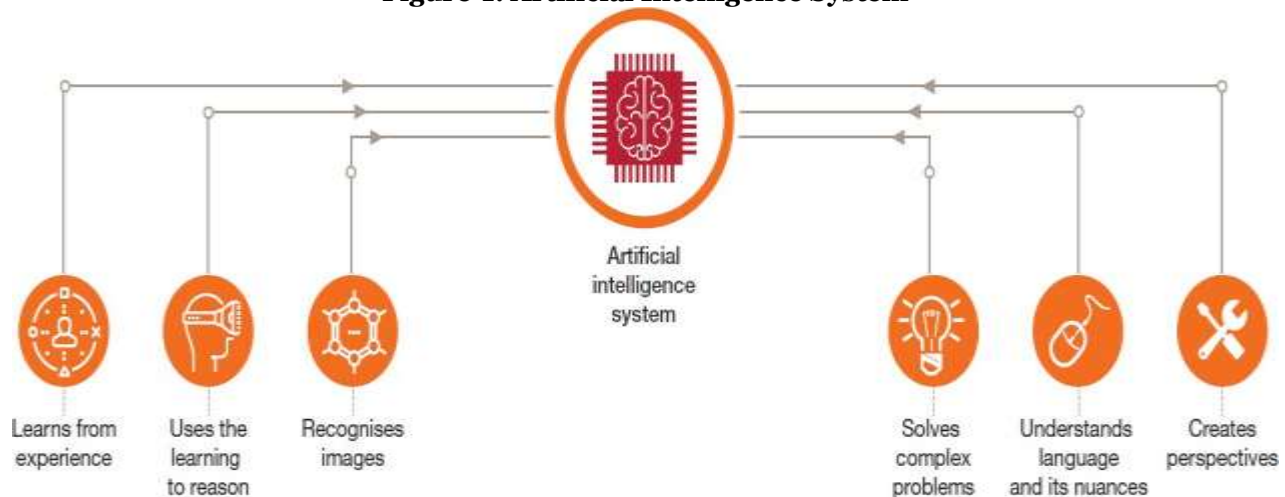
its users. We created a theoretical model that explains how AI affects higher-order variables, such as e-commerce firm performance. To examine further theories and theoretical frameworks proposed in this study, we used Liker modeling analysis to examine 200 valid surveys. This study provides vital guidance for e-commerce companies trying to boost efficiency and obtain a competitive edge, as well as improves AI theory and company performance in post pandemic era.

Use of Artificial Intelligence in modern corporate Sectors

Artificial intelligence, or AI, is referred to as the "intelligence of a computer or computerized robotic system to analyze data and produce results that are analogous to the thought process of individuals decision-making, in learning and problem-solving." The objective of artificial intelligence systems is also to "solve challenging issues in ways that closely approximate human logic and reasoning." A lot of attention has been focused on artificial intelligence as a possible means of enhancing firms' competitive advantages, according to the authors Hughes, Audretsch, Obschonka and Shareef 2021.

The commercial uses of applied AI also appear to be very valuable. For e-commerce organizations, the ability to develop, integrate, and use AI-based resources in relation to RBV is our definition of the AIC. However, significant infrastructure resources, such as finance, data hardware and software, and technical support, are required for the successful and efficient application of AI in enterprises. The majority of e-commerce companies benefit from an inherent advantage when it comes to accessing data resources because they operate online. When the organization determines what the essential tangible resources are, it is important to leverage intangible resources as well. Businesses that choose not to employ AI for planning, coordination control, and implementation will not gain anything from it. AI will soon be used by employees.

Figure-1: Artificial Intelligence System



Source of Data; Authors conceptual model

(A) Artificial The impact of artificial intelligence on human resources and recruitment Talent Spotting

Artificial intelligence has the greatest business impact on talent acquisition when compared to all other industries. AI-powered facial recognition software is utilized in the Talent Acquisition Superset to recognize the emotions of candidates, and resume screening, Chatbot interaction, and candidate sourcing are just a few of the procedures that apply intelligence.

NLP, Chatbots, and sentiment analysis have made it much easier for businesses to assess and get real-time feedback from their employees about what to do next. This brings us back to the subject of how AI may be employed in business. When it comes to employee engagement, the main concerns that employees typically voice have to do with meeting with their reporting supervisors once a year to discuss how the work is going and their performance. A solution to this problem is offered by Peakon, an AI-based tool that lets every employee work to their maximum capacity.

Human Resource Management and Employee Engagement

There are several AI solutions on the market right now that HRs may use to help with administrative tasks. Human resources departments across the globe are currently using big data to design employee schedules and Chatbots to answer employee questions. This helps firms anticipate demand and plan effective staffing schedules to meet it.

Performance Administration and managing customers buying behavior

Several applications spring to mind when talking about AI's role in learning and development: Chatbot coaching, career paths, personalized training recommendations, and manager development based on real-

time team input. Due to AI-driven assessments' instantaneous and real-time nature (algorithms continuously monitoring quotas, targets, and how they change for every person), it is much easier to record all instances of both good and poor performance. This answers the question of how AI will help organizations internally and facilitates the process of identifying the appropriate performance indicators. A company's ability to take corrective action before an issue worsens can be facilitated by real-time access and monitoring, which can help identify faults.

Research and development on marketing and sales and the effects of AI

Artificial intelligence is able to develop a comprehensive grasp of a wide range of different marketplaces and customers. By obtaining and analyzing the vast amounts of data that are circulated throughout a market and a corporation, businesses can investigate problems and generate previously unimagined solutions.

Customer Service and Creation of Content

When people ask what artificial intelligence is used for in a corporate setting, Chatbots are the most common answer. Thanks to AI Chatbots that are driven by deep learning, businesses may now access layers of data from neural networks, including consumer information and data that have been gathered over time. Chatbots have an advantage over humans when they are given real-time access to customer preferences and purchase history. A Chatbot is a useful tool for content marketers who are sick of using spreadsheets to create their monthly content. Wordsmith is a well-known tool that can effectively convert a variety of structured data elements in texts. A few companies have implemented Wordsmith-like systems, but AI content creation is limited to periodicals with rigid editorial guidelines.

Greater User Experience and Forecasting sales

In a nutshell, artificial intelligence is advantageous to business because customers are more demanding than they have ever been. They need a wide range of products, information, and services provided in one place at a fast rate, all in real time. Furthermore, you may deliver all of the services in real time and from a single location by utilizing AI, which enhances the customer experience. When it comes to forecasting and sales prediction, artificial intelligence excels. Predictions regarding future sales figures and the success or failure of individual deals can be made by looking at historical sales performance and trends. Predictive AI will ultimately be advantageous when developing apps for the sales industry.

Artificial Intelligence's effects on finance and accounts payable

AI-based invoice management systems are widely available and significantly simplify the invoice processing process because of the usage of digital workflows. To do this, accounting codes that are appropriate for controlling and generating bills are taught to the machine learning algorithms through design.

Procurement and Audits

The purchasing and procurement procedures used by organizations usually include a ton of paperwork as well as the use of several files and systems that are frequently inconsistent with one another. If mobile apps powered by AI are utilized to aggregate and handle unstructured data, then APIs and AI will make the procurement process much more paperless and required less human labor. By Digitizing the audit process leads to increased security since it enables a digital audit trail that documents who saw the file and when. Artificial intelligence will allow auditors to instantly access digital data, doing away with the laborious and ineffective process of searching file cabinets for supporting documentation.

Management of Expenses

It takes a lot of work for any accounting team to evaluate and approve expenses to make sure they follow the rules and regulations of the company. AI can be used to program devices to check invoices, audit spending, and alert the finance department to any inconsistencies.

B.) Implications of AI for Operations Management Evaluation of the logs

Log analysis is the main use case for AI-powered operations. Data streams from the operating system, hardware, software, servers and application layers can be gathered, saved, processed, and analyzed by machine learning algorithms. The examination of an event's root cause is then carried out using the data by using log analysis to harness the potential of AI.

1. Capacity Management

IT architects frequently take into account the apps' resource needs; intricate, multi-tiered applications could be quite difficult for them. The physical layer of each program needs to be assigned the appropriate number of CPU cores, RAM, storage, and network bandwidth. Artificial intelligence is useful when choosing the correct hardware specifications or public cloud instance type.

2. Scaling Infrastructure and Construction Maintenance

There are options for both reactive and proactive auto scaling. Events that occur in the reactive mode will be

tracked by the monitoring system. Finally, on our list of ways AI may enhance business operations, is the help it offers with building maintenance. When considering the comfort of their residents, facilities managers can use technology to use energy more efficiently.

3. Future use of AI in marketing and sales applications

Most future marketing applications of AI are essentially only constrained by the user's creativity. Innovations in artificial intelligence have the potential to transform our understanding of ourselves and the way marketers engage with people and their technology in the modern corporate sectors. The consumer and the software they use to make decisions are two things that marketing strategies need to understand. The capabilities of artificial intelligence will continue to grow, and it is here to stay. Sales forecasting and client retention are two of the many sales jobs that artificial intelligence currently does. "Regional sales distribution, sales transactions, sales executive involvement and Mining of customer actions," While artificial intelligence is already capable of performing the above described duties, it cannot replace human communication between a sales representative and a customer.

Literature Review

Basic ability to reason (**Zhang et al., 2016**). "An Artificial Intelligence Summer Research Project Convened at Dartmouth College in 1956, a 1955 Western Joint Computer Conference session on Learning Machines, and a 1958 National Physical Laboratory-sponsored Symposium on the automation of Thought Processes." It's possible for artificial intelligence to mimic human behavior or character. In 2015, Martínez and Fernandez-Rodríguez Artificial intelligence devices will be able to recognize human behavior and emotions and will tailor their actions accordingly. Banking and Finance Using Artificial Intelligence **J. Soldatos**, "Big data and AI in Digital Finance," 2022, cited by 1, the goal of this book is to outline INFINTECH's strategy for big data and AI-driven innovations in. Digital Finance by way of a compilation. Machine learning and artificial intelligence's effects on corporate operations. In his research study "How Big Data Is Empowering AI," **Randy Bean (2017)**. The study is concentrated on a broad range of corporate domains, specifically accounting, business, management, finance, and economics. In order to search the databases, we first developed a data extraction sheet (**Kreaus et al., 2020**) that included a list of terms connected to the COVID-19 problem and artificial intelligence. We point out that **Zeng, Chen, and Lew's (2020)** May 2020 publication, "From high-touch to high-tech: COVID-19 drives robotics adoption," is one of the earliest scientific works on the topic. However, it should be noted that some research has concentrated more on sectors of specific activities, such as the hospitality sector (**Chiang 2020, Romero 2021, Seyitoglo 2020**), tourism sector (**Ribeiro 2022, Zeng 2020, Ivanov 2022, Gaur 2021**), healthcare sector (**Wang 2021, Ali 2021, Uzir 2021**), industrial sector (Sung-Eun Kang et al 2021), audit profession (**Albitar 2021**), and insurance area (**Volosovych 2021**). On the other hand, the majority of the articles discussing AI in the context of the Covid crisis target all types of companies in addition to the sectors in which they operate. There are several academic references and fundamental theoretical models in the publications that we kept for our analysis. Based on the study perspective that these papers' writers have adopted, these components provide value to the research.

Objective of the Study

- To assess AI's potential and difficulties in social media marketing
- To investigate artificial intelligence's function in corporate operations

Research Methodology

The authors of this study prefer to collect data from secondary sources and some data has been obtained from primary qualitative sources based on surveys of long-term industry workers who see the influence increasing steadily in their daily work and how it permeates every part of the business model, increasing accuracy and productivity. Secondary data has been taken from a number of published research papers, books, news paper, PIB websites of government of India and journals that examine the impact and expansion of influence across different business sectors. An online survey has been used to collect data in order to look into respondents' opinions regarding AI and its possible impacts on society both now and in the future. The authors employed statistical tools from SPSS-25 software to analyze the data using descriptive analysis for correlation tests and standard deviation. This allowed them to gain an understanding of how businesses and consumers perceive the potential effects of artificial intelligence (AI) in various industries and daily life in the post-pandemic era.

Data Analysis and Results

In this study Secondary data as well as primary data are gathered from many sources and analyzed for use in various business domains and curriculums, Artificial Intelligence is in charge. Artificial intelligence is being

used in everything that we do in our daily lives, including the services and goods we buy.

AI is a crucial and revolutionary technology in today's world, despite certain disadvantages like the potential for bias or privacy concerns. This is referred to as personal open communication regarding anything that the user feels comfortable sharing. The most recent Liker process in our poll was based on preferences and individual opinions regarding the application of AI in all business sectors and other spheres of life. 31 publications published between March 2020 and March 2022 were examined and organized in this article using the scoping literature review technique. The goal of the study is to assess the scientific literature on artificial intelligence in light of the current situation to adopt it in the modern corporate sectors. The primary findings show that a number of research have covered the modifications brought about by COVID-19 and the many functions of artificial intelligence. Moreover, there is still a great deal of missing information from the research, particularly as most of them have focused on the crisis's immediate repercussions rather than its potential long-term effects on the lives of businesses and their stakeholders.

Table -1; Descriptive data. Applications of artificial intelligence used by SMEs

	Block- I	Block- II	Block- III
	Period April-June 2020	Period October- December 2020	Total sample
Using AI-based applications (per cent)	38.48 (0.48)	47.27 (0.50)	42.56 (0.49)
number of AI tools currently in use (c.)	1.31 (2.16)	1.62 (2.30)	1.46 (2.23)
AI applications being used to gather data on past online purchases made by customers	23.34 (0.42)	27.63 (0.44)	25.33 (0.43)
Using AI tools to provide customized buying recommendations (per cent)	17.03 (0.37)	18.90 (0.39)	17.90 (0.38)
Using AI tools to target web audiences (per cent)	22.08 (0.41)	30.54 (0.46)	26.01 (0.43)
Using AI tools to provide clients with prompt responses (per cent)	23.02 (0.42)	28.00 (0.44)	25.33 (0.43)
Cash flow forecasting using AI tools (per cent)	7.25 (0.25)	11.27 (0.31)	9.12 (0.28)
Using AI tools to gather data on the product offerings of other companies (per cent)	7.57 (0.26)	10.90 (0.31)	9.12 (0.28)
AI-powered tools to counteract fraudulent product reviews (per cent)	5.67 (0.23)	5.81 (0.23)	5.74 (0.23)
Using AI tools to strengthen cyber security, safeguard data, and respect customers' privacy (per cent)	11.04 (0.31)	14.18 (0.34)	12.50 (0.33)
AI tools used in legal services (per cent)	10.41 (0.30)	12.36 (0.32)	11.31 (0.31)
AI applications used for hiring and human resources (per cent)	4.41 (0.20)	6.90 (0.25)	5.57 (0.22)
Observations (n)	317	275	592

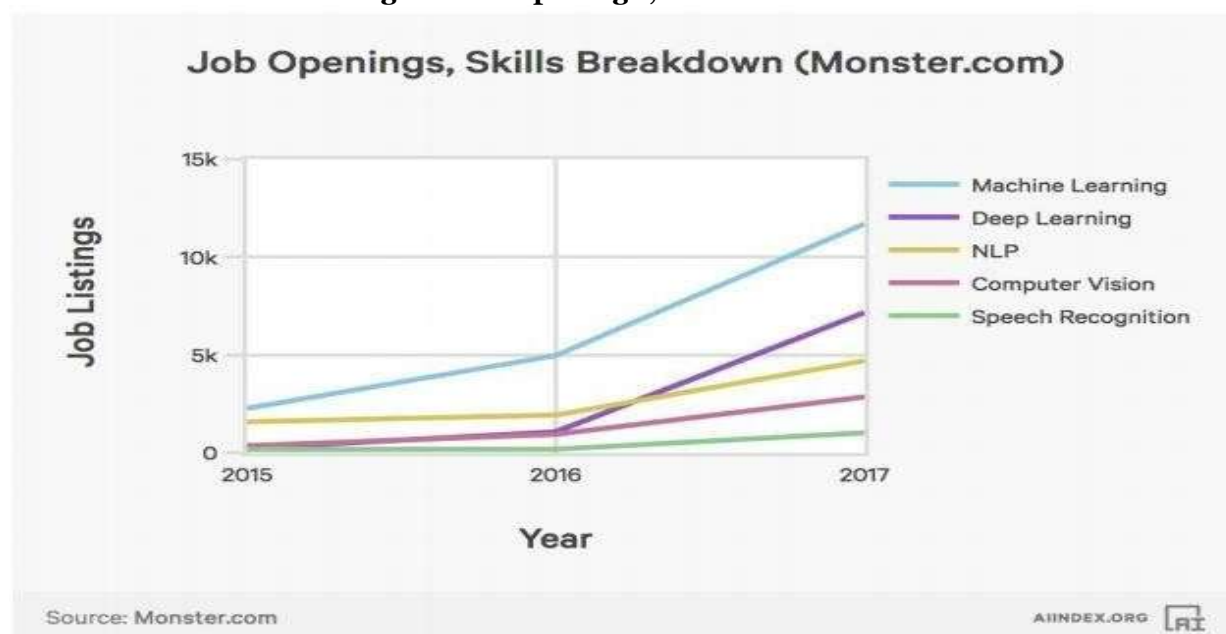
Source of Data : Authors Calculations

If the empirical world's manifestation of AI in SMEs is unpredictable, then it is impossible to quantify its impact. The purpose of the suggested AI scale was to provide information systems academics with an empirical evaluation of the use of AI in SMEs. The suggested scale helps evaluate company benefits and summarize AI activity. Furthermore, the suggested scale made it possible to measure if SMEs' use of AI apps and the quantity of those applications they use are linked to a decrease in business risks brought on by the COVID-19 pandemic. By evaluating SMEs' use of AI, one may ascertain whether or not they are following the digitalization trend. The dynamic capabilities theory offers a thorough framework for analyzing the effectiveness of these enterprises' digital transformations. Small and medium-sized enterprises (SMEs) should embrace technology-enabled tools and networks to track the evolution of core technologies and markets in order to succeed in dynamic, competitive, and digitally connected business environments (Campbell et al., 2020; Chan et al., 2020).

Opportunities

There is an opportunity where we can replace the traditional technology system by the futuristic artificial and machine learning alternatives. And saying about the opportunities for machine learning and artificial intelligence in business, it can enable and develop the new products and services by which the future of the world will change. It will take every part of work in society without putting out force by the help of AI in the business and other field. Owing to resource limitations, SMEs looking to invest in AI may need to find, investigate, and take advantage of fresh prospects and external knowledge in addition to recognizing internal expertise already in place. Chan et al. (2020) assessed how affordable, common digital technology may support learning, innovation, and change for small firms.

Managers of small and medium-sized businesses should take note of the study's conclusions and suggestions, which show that AI applications are linked to lower business risks in both types of businesses.

Figure: Job openings , Skills Breakdown

Note: A single AI-related job may be double counted (belong to multiple categories). For example, a job may specifically require natural language processing and computer vision skills.

Source of Data: Authors calculations

SMEs may be better able to assess if AI can assist with business operations during unpredictable times thanks to the study's findings. During the COVID-19 pandemic, the current study made it possible to determine what kinds of AI applications may improve dynamic capabilities and boost SMEs' performance. Consumers switched from personal to digital interactions during the COVID-19 epidemic, individuals stayed at home, and physical labor was curtailed (Bartika et al., 2020; Donthu & Gustafsson, 2020). AI has the potential to yield better search results for online buyers, improve customer targeting, create accurate messages, draw conclusions based on their behavior, and increase customer support. Automatic chat platforms may also help SMEs expand their client base and experience, freeing up resources for more important customer care, correspondence, and interactions (Jablonska & Polkowski, 2017; Um et al., 2020).

Issues and Challenges

Technology advancement presents the first hurdle since adopting AI and machine learning technologies requires very powerful computer systems. One of the main obstacles to fostering the trust necessary for people to embrace such change is the general lack of information about both technologies among the large population to educate individuals and all societal segments about technology in post pandemic era. According to Ivashchenko et al. (2020), Xinyue et al. (2020), Yan & Ouyang (2018), Yang et al. (2018), and others, AI in cash flow could help SMEs deal with liquidity challenges and efficiently simulate operations. Further, SMEs may be able to better safeguard their operations and reputation with the use of AI technologies that identify fraud and phony reviews (Hatfield, 2018; Jiang et al., 2016; Kumaravel & Bizu, 2019; Mrabet et al., 2018). Moreover, AI applications in repetitious legal and HR chores may help SMEs efficiently cut labor-intensive procedures so that workers' time is better spent on activities that generate value (Armour & Sako, 2020; Black & van Esch, 2020).

Conclusion

AI might imply different things to various people. AI can't really learn; it's mostly used for information and automation now. A completely self-aware AI program is still many years away. Risk exists at every stage of AI. The majority of skilled work is at risk from the leading AI programs. AI at a higher level may pose serious risks to humankind. AI will remain a technology for a long time because its advantages only get bigger. It will be necessary for businesses and society at large to adapt to the new technologies. AI will be necessary for businesses to stay competitive, and employees may need to adapt their skill set in order to find new jobs. Legal liability concerns and other related difficulties will come up as AI technology develops further. With the use of AI applications, SMEs' business risks resulting from the COVID-19 pandemic in London, England, decreased, as demonstrated by a 10-item scale designed to examine the use of AI in cyber security, in marketing, predictions sales, communication, , pricing and cash flow, fake reviews, legal services and recruitment . Results showed that AI solutions can assist SMEs in adapting to novel conditions

during the COVID-19 pandemic, as they remained stable across many parameters including enterprise size, turnover, and years of operation. When applied to SMEs, artificial intelligence (AI) can be thought of as a collection of best practices that will strengthen their ability to adapt to changing market conditions and technological advancements. This will increase productivity and lower the business risks associated with the COVID-19 pandemic.

References

- [1] Arksey, h.; o'malley, l. Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8, n. 1, p. 19-32, 2005.
- [2] Akbari, m.; hopkins, j. L. Digital technologies as enablers of supply chain sustainability in an emerging economy. *Operations management research*, 2022.
- [3] Albitar, k.; gerged, a. M.; kikhia, h.; hussainey, k. Auditing in times of social distancing: the effect of covid-19 on auditing quality. *International journal of accounting and information management*, 29, n. 1, p. 169-178, 2021.
- [4] Alfalih, a. A. Customer engagement design during the covid 19 pandemic, mutual trust and intelligent automation: a conceptual perspective. *Journal of innovation and entrepreneurship*, 11, n. 1, 2022.
- [5] Ali, m. M. Digital opportunities in the healthcare enterprises during covid-19: an empirical analysis of the developing country. *Corporate governance and organizational behavior review*, 5, n. 2, p. 44-55, 2021.
- [6] Almeida, f.; duarte santos, j.; augusto monteiro, j. The challenges and opportunities in the digitalization of companies in a post-covid-19 world. *Ieee engineering management review*, 48, n. 3, p. 97-103, 2020.
- [7] Aziki, A., & Fadili, M. H. (2021). Screening the recent uses of Artificial intelligence in accounting firms: a scoping review.
- [8] Caselli, m.; fracasso, a.; traverso, s. Robots and risk of covid-19 workplace contagion: evidence from italy. *Technological forecasting and social change*, 173, 2021.
- [9] Chaudhuri, r.; chatterjee, s.; kraus, s.; vrontis, d. Assessing the ai-crm technology capability for sustaining family businesses in times of crisis: the moderating role of strategic intent. *Journal of family business management*, 2022.
- [10] Chiang, a. H.; trimi, s. Impacts of service robots on service quality. *Service business*, 2020.
- [11] Coombs, c. Will covid-19 be the tipping point for the intelligent automation of work? A review of the debate and implications for research. *International journal of information management*, 55, 2020.
- [12] Daudt, h. M.; van mossel, c.; scott, s. J. Enhancing the scoping study methodology: a large, inter-professional team's experience with arksey and o'malley's framework. *Bmc medical research methodology*, 13, n. 1, p. 1-9, 2013.
- [13] Dwivedi, y. K.; hughes, d. L.; coombs, c.; constantiou, i. Et al. Impact of covid-19 pandemic on information management research and practice: transforming education, work and life. *International journal of information management*, 55, 2020.
- [14] Gaur, l.; afaq, a.; singh, g.; dwivedi, y. K. Role of artificial intelligence and robotics to foster the touchless travel during a pandemic: a review and research agenda. *International journal of contemporary hospitality management*, 33, n. 11, p. 4079-4098, 2021.
- [15] Gertzen, w. M.; van der lingen, e.; steyn, h. Goals and benefits of digital transformation projects: insights into project selection criteria. *South african journal of economic and management sciences*, 25, n. 1, 2022.
- [16] Gupta, s.; modgil, s.; meissonier, r.; dwivedi, y. K. Artificial intelligence and information system resilience to cope with supply chain disruption. *Ieee transactions on engineering management*, 2021.
- [17] Hoogendoorn, g. Scopus: the continuing development of an abstract and citation database. *The serials librarian*, 55, n. 1-2, p. 227-234, 2008.
- [18] Ivanov, s. H.; webster, c.; stoilova, e.; slobodskoy, d. Biosecurity, crisis management, automation technologies and economic performance of travel, tourism and hospitality companies – a conceptual framework. *Tourism economics*, 28, n. 1, p. 3-26, 2022.
- [19] Kellermeyer, l.; harnke, b.; knight, s. Covidence and rayyan. *Journal of the medical library association: jmla*, 106, n. 4, p. 580, 2018.
- [20] Lose, t.; khuzwayo, s. Technological perspectives of a balanced scorecard for business incubators: evidence from south africa. *Problems and perspectives in management*, 19, n. 4, p. 40-47, 2021.
- [21] Milojević, n.; redzepagic, s. Prospects of artificial intelligence and machine learning application in banking risk management. *Journal of central banking theory and practice*, 10, n. 3, p. 41-57, 2021.
- [22] Modgil, s.; singh, r. K.; hannibal, c. Artificial intelligence for supply chain resilience: learning from covid-19. *International journal of logistics management*, 2021.
- [23] Naz, f.; kumar, a.; majumdar, a.; agrawal, r. Is artificial intelligence an enabler of supply chain resiliency post covid-19? An exploratory state-of-the-art review for future research. *Operations management research*, 2021.
- [24] Polas, m. R. H.; raj, v. Technology and entrepreneurial marketing decisions during covid-19. *Global*

- journal of flexible systems management, 22, n. 2, p. 95-112, 2021.
- [25] Pham, m. T.; rajić, a.; greig, j. D.; sargeant, j. M. Et al. A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Research synthesis methods*, 5, n. 4, p. 371-385, 2014a.
 - [26] Ribeiro, m. A.; gursoy, d.; chi, o. H. Customer acceptance of autonomous vehicles in travel and tourism. *Journal of travel research*, 61, n. 3, p. 620-636, 2022.
 - [27] Robertson, j.; ferreira, c.; paschen, j. Reading between the lines: understanding customer experience with disruptive technology through online reviews. *Australasian marketing journal*, 29, n. 3, p. 215-224, 2021.
 - [28] Romero, j.; lado, n. Service robots and covid-19: exploring perceptions of prevention efficacy at hotels in generation z. *International journal of contemporary hospitality management*, 33, n. 11, p. 4057-4078, 2021.
 - [29] Rudko, i.; bonab, a. B.; bellini, f. Organizational structure and artificial intelligence. Modeling the intraorganizational response to the ai contingency. *Journal of theoretical and applied electronic commerce research*, 16, n. 6, p. 2341-2364, 2021.
 - [30] Seyitoğlu, f.; ivanov, s. A conceptual framework of the service delivery system design for hospitality firms in the (post-)viral world: the role of service robots. *International journal of hospitality management*, 91, 2020.
 - [31] Srinivasan, s. M.; shah, p.; surendra, s. S. An approach to enhance business intelligence and operations by sentimental analysis. *Journal of system and management sciences*, 11, n. 3, p. 27-40, 2021.
 - [32] Tricco, a. C.; lillie, e.; zarin, w.; o'brien, k. K. Et al. Prisma extension for scoping reviews (prisma-scr): checklist and explanation. *Annals of internal medicine*, 169, n. 7, p. 467-473, 2018
 - [33] Uzir, m. U. H.; al halbusi, h.; lim, r.; jerin, i. Et al. Applied artificial intelligence and user satisfaction: smartwatch usage for healthcare in bangladesh during covid-19. *Technology in society*, 67, 2021.
 - [34] Volosovych, s.; zelenitsa, i.; kondratenko, d.; szymła, w. Et al. Transformation of insurance technologies in the context of a pandemic. *Insurance markets and companies*, 12, n. 1, p. 1-13, 2021.
 - [35] Wang, w. T.; wu, s. Y. Knowledge management based on information technology in response to covid-19 crisis. *Knowledge management research and practice*, 19, n. 4, p. 468-474, 2021.
 - [36] Zeng, z.; chen, p. J.; lew, a. A. From high-touch to high-tech: covid-19 drives robotics adoption. *Tourism geographies*, 22, n. 3, p. 724-734, 2020.
 - [37] Zhong, l.; coca-stefaniak, j. A.; morrison, a. M.; yang, l. Et al. Technology acceptance before and after covid-19: no-touch service from hotel robots. *Tourism review*, 2022.
 - [38] Zimmerling, a.; chen, x. Innovation and possible long-term impact driven by covid-19: manufacturing, personal protective equipment and digital technologies. *Technology in society*, 65, 2021.
 - [39] Artificial Intelligence: A modern approach" by Stuart Russell & Peter Norvig- 2nd Edition.
 - [40] Bostrom N, Yudkowsky E (2014) The ethics of artificial intelligence. *The cambridge handbook of artificial intelligence* 12, pp316-334.
 - [41] Business impacts of machine learning sponsored by Google cloud 2017
 - [42] IBA Global employment Institute, Artificial Intelligence and robotics and their Impact on the workplace, April 2017.
 - [43] Artificial Intelligence can possibly copy human character or practices [Turan et al. 2017].
 - [44] Martinez and Fernandez-Rodriguez, 2015-AI machines will be perceived the human conduct and feelings and will prepare their part according to it.
 - [45] Tyagi, Amit. (2016). Essay: Artificial Intelligence: Boon or Bane?. *SSRN Electronic Journal*.

Source website

1. <https://appinventiv.com/blog/ai-impact-on-business/>
2. <https://www.google.com>
3. <http://www.nber.org/papers/w24449>
4. <https://thenewstack.io/machine-learning-for-operations/>
5. <https://insidebigdat.com/5>
6. <https://www.weforum.org/agenda/2017/12/charts-artificial-intelligence-ai-index/>